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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/727,354	11/30/2000	Pirmin Gerhard Muffler	VO-508	3361

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EXAMINER	
ROSSI, JESSICA	
ART UNIT	**PAPER NUMBER**
1733	7

DATE MAILED: 06/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/727,354	MUFFLER, PIRMIN GERHARD	
	Examiner	Art Unit	
	Jessica L. Rossi	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-12 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-12 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 1, 3-8. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Information Disclosure Statement

2. The information disclosure statement filed 3/19/01 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

Specification

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

Regarding claim 6, the specification only has support for one centrally formed duct (Figures 1-4; page 6, lines 6-7). It is suggested that Applicants amend the specification accordingly.

Regarding claims 8 and 12, the specification does not have support for this limitation. It is suggested that Applicants amend the specification accordingly.

4. The disclosure is objected to because of the following informalities:

Claim 1, line 1: change "In a method" to --A method--.

Claim 1, line 3: insert --,-- after (5).

Claims 2-12: change "In the method" to --The method--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, it is unclear how the substrate is contacted with the protective layer when Figures 1-4 show the protective layer being contacted with the substrate. Applicants are asked to clarify. It is suggested to redraft the claim to state --contacting the protective layer with the substrate-- in lines 4-5.

Regarding claim 1, it recites the limitation "the entire protective layer" in line 5. There is insufficient antecedent basis for this limitation in the claim. It is suggested to delete "entire".

Regarding claim 4, it recites the limitations "the substrate arching" and "the carrying body" in lines 1-2. There is insufficient antecedent basis for these limitations in the claim. It appears that present claim 4 should be dependent on present claim 5 since claim 5 introduces the carrying body and how it interacts with the substrate. It is suggested to renumber present claim 5

as claim 4 while making it dependent on present claim 3 and renumber present claim 4 as claim 5 while making it dependent on new claim 4.

Regarding claim 4, it is unclear what is meant by "formation of the substrate arching". Do Applicants mean that the substrate arches from the carrying body? Applicants are asked to clarify. It is suggested to redraft the claim to state --wherein the substrate is arched and detached from the carrying body by controlling a pressure of the medium in a cavity between the substrate and the carrying body--.

Regarding claim 6, it is unclear what is meant by "preferably planar". Is the portion planar or not? Applicants are asked to clarify. It is suggested to delete "preferably".

Regarding claim 7, the grooves are flow apertures according to claim 6, so it is unclear as to how the flow apertures can be both overpressure lines and negative pressure lines? It appears that Figure 1 shows duct 7 configured as an overpressure line. Applicants are asked to clarify. It is suggested to redraft the claim to state --wherein the ducts (7) are configured as overpressure lines and the grooves (3) are configured as negative pressure lines--.

Regarding claims 8 and 12, it is unclear what is meant by "the portion is one of circular, oval and polygonal". Are applicants referring to the cross-section of the portion? Applicants are asked to clarify. It is suggested to insert --cross-section-- after "polygonal".

Regarding claim 10, it recites the limitations "the substrate arching" and "the carrying body" in lines 1-2. There is insufficient antecedent basis for these limitations in the claim. It is suggested to change "the carrying body" to --a carrying body--.

Also regarding claim 10, it recites the limitation "the medium" in line 3. There is insufficient antecedent basis for this limitation in the claim. It is suggested to change this phrase to --a medium--.

Also regarding claim 10, it is unclear what is meant by "formation of the substrate arching". Do Applicants mean that the substrate arches from the carrying body? Applicants are asked to clarify. It is suggested to redraft the claim to state --wherein the substrate is arched and detached from a carrying body by controlling a pressure of a medium in a cavity between the substrate and the carrying body--.

Regarding claim 11, it recites the limitation "the flow apertures" and "the grooves" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim. If Applicants renumber present claim 5 as claim 4, as suggested above, and keep present claim 11 dependent on claim 4 the antecedent basis problem will no longer exist.

Also regarding claim 11, the grooves are flow apertures according to claim 6, so it is unclear as to the flow apertures can be both overpressure lines and negative pressure lines? It appears that Figure 1 shows the duct 7 configured as an overpressure line. Applicants are asked to clarify. It is suggested to redraft the claim to state --wherein ducts (7) are configured as overpressure lines and grooves (3) are configured as negative pressure lines in the carrying body--.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1-3, 5-6, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Admitted Prior Art in the specification of the present application in view of the collective teachings of Suzuki et al. (US 5284538) and Gore et al. (US 5733410).

It is noted that the present invention is concerned with eliminating the formation of air bubbles when a first substrate is bonded to a second substrate having a layer thereon (page 3, 2nd paragraph).

With respect to claim 1, the Admitted Prior Art teaches bonding a thin-walled flat substrate (wafer) to an assembly carrier having a protective layer thereon (page 2 – 1st paragraph of page 3). However, the Admitted Prior Art is silent as to arranging the substrate at a spacing and curved in a convex manner with respect to the protective layer and contacting the substrate with the protective layer by laying the substrate over the protective layer from a contact point towards an edge of the substrate.

It is known to bond a first substrate to a second substrate having a layer thereon wherein the first substrate is temporarily engaged by an application apparatus such that the first substrate is arranged in a convex manner while being spaced from the layer on the second substrate, as taught by the collective teachings of Suzuki et al. (Figure 6; column 3, lines 11-12; column 4, lines 41-56) and Gore et al (Figure 1; column 2, lines 16-17 and 21-25 and 28-30 and 38-40). The first substrate is then applied to the layer on the second substrate by means of the application apparatus such that the first substrate contacts the layer from a contact point towards the edges of the first substrate in order to **prevent the formation of air bubbles** between the first substrate and the layer (Suzuki – column 5, lines 4-13; Gore – Figures 3-5; column 3, lines 27-29).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to arrange the substrate of the Admitted Prior Art on an application apparatus in a convex manner while being spaced from the protective layer on the assembly carrier followed by applying the substrate to the protective layer such that the substrate contacts the protective layer from a contact point towards the edges of the substrate because such is known, as taught by the collective teachings of Suzuki et al. and Gore et al., and this application technique would prevent the formation of air bubbles between the substrate and the protective layer.

Regarding claim 2, Suzuki (Figure 6) and Gore (Figure 4) teach applying a constant pressure when the first substrate is applied to the layer on the second substrate.

Regarding claims 3 and 9, Suzuki (column 4, lines 41-56) and Gore (column 2, lines 49-52) teach a pressure medium applied to the side of the first substrate remote from the layer.

Regarding claim 5, Suzuki (Figure 6; column 4, lines 41-56) and Gore (Figure 1; column 2, lines 20-25 and 49-53) teach an application apparatus (carrying body) moveable relative to the second substrate and a portion facing the layer that carries the first substrate and has a plurality of flow apertures for accommodating the pressure medium.

Regarding claim 6, Suzuki (Figure 6) and Gore (Figure 1) teach the flow apertures being ducts and grooves.

Allowable Subject Matter

9. Claims 4, 7-8 and 10-12 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Regarding claims 4 and 10, the prior art fails to teach or suggest applying a substrate to an assembly carrier wherein the substrate is arched and detached from a carrying body by controlling a pressure of a medium in a cavity between the substrate and the carrying body.

Regarding claims 7 and 11, the prior art fails to teach or suggest the ducts configured as overpressure lines and the grooves configured as negative pressure lines.

Regarding claim 8, it is dependent on claim 7.

Regarding claim 12, it is dependent on claim 4.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Jessica L. Rossi** whose telephone number is **703-305-5419**. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael W. Ball can be reached on 703-308-2058. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Jessica L. Rossi
Patent Examiner
Art Unit 1733

jlr
June 11, 2002

Michael W. Ball
Supervisory Patent Examiner
Technology Center 1700